

ABSTRACT OF THE DISCLOSURE

A method for forming high capacitance crystalline dielectric layers with (111) texture is disclosed. In an exemplary embodiment, deposition of a plurality of nuclei is performed at a temperature in the range of about 430 to 460 degrees Celsius, followed by growth of a continuous BSTO dielectric layer at a temperature greater than 600 degrees Celsius. In an exemplary embodiment, a process is disclosed for growing a barium strontium titanium oxide film with high capacitance and thickness of about 30 nm or less.